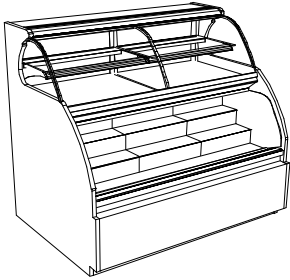


COMBINATION CASES

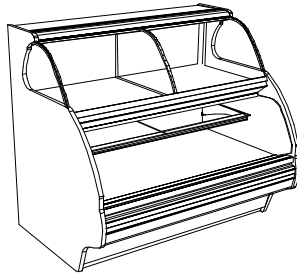
- CONVERTIBLE SERVICE ABOVE REFRIGERATED SELF-SERVICE (HOU[L*]52R)
- NON-REFRIGERATED SERVICE ABOVE REFRIGERATED SELF-SERVICE (HUDLR[L*]52)
- REFRIGERATED SERVICE ABOVE REFRIGERATED SELF-SERVICE (HURLR[L*]52)
- NON-REFRIGERATED SERVICE BESIDE REFRIGERATED SELF-SERVICE (HVLD[L*]RSS)
- REFRIGERATED SERVICE BESIDE NON-REFRIGERATED SERVICE (H5C[L*]50LR or RR)
- NON-REFRIGERATED SERVICE ABOVE REFRIGERATED SERVICE (HSL[L*]50R)
- REFRIGERATED SERVICE ABOVE REFRIGERATED SELF-SERVICE WITH REAR STORAGE (HVOU[L*]RSS)

PLEASE NOTE THE FOLLOWING:

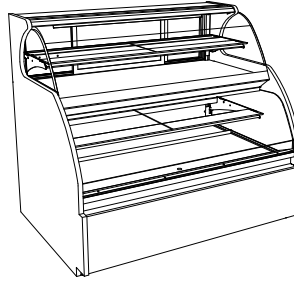
1. YOUR SPECIFIC MODEL NUMBER IS ON THE SERIAL LABEL ON CASE REAR (NEAR MAIN POWER SWITCH).
2. CASES SHOWN REFLECT FULL & OPEN END PANELS / STRAIGHT OR ANGLED BASES. YOURS MAY DIFFER.
3. SEE "MODELS (AND THEIR RESPECTIVE CASE DIMENSIONS) LISTED IN THIS MANUAL" SECTION FOR ADDITIONAL INFORMATION REGARDING SPECIFIC CASE DIMENSIONS OF STANDARD MODELS AND CDRs.
4. *[L] DENOTES VARIETY OF CASE LENGTHS.



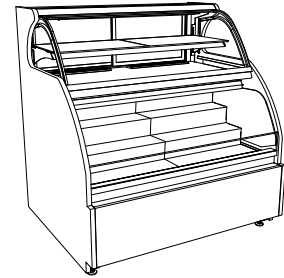
HOU[L*]52R w/Optional Lower Display Steps



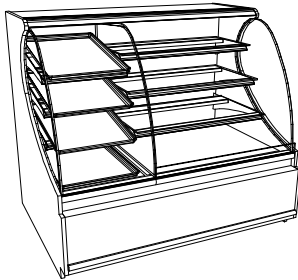
HOU[L*]52R Optional Angled Base



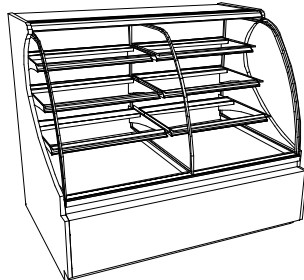
HUDLR[L*]52 Straight Base



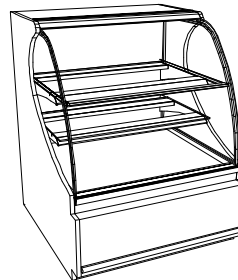
HURLR[L*]52 w/Optional Lower Display Steps



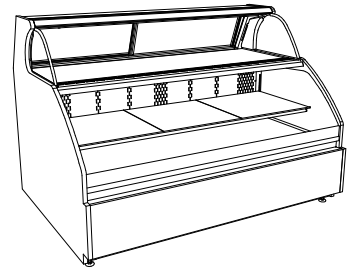
HVLD[L*]RSS With Straight Base



H5C[L*]50LR or RR Straight Base / Cutaway Ends



HSL[L*]50R Optional Lower Shelf



HVOU[L*]RSS Straight Base

TABLE OF CONTENTS

TABLE OF CONTENTS	2
MODELS LISTED IN MANUAL / DETERMINING THEIR RESPECTIVE CASE DIMENSIONS.....	3
OVERVIEW AND WARNINGS	4
INSTALLATION: REMOVAL FROM SKID, REMOVING LOWER FRONT PANELS	5
INSTALLATION: ADJUSTING FRONT PANELS / ADJOINING UNITS / GLASS SHELVING	6
INSTALLATION: ELEC. CONNECTIONS / LOCKING CASTERS / ADJUSTING LEVELERS	7
INSTALLATION: FRONT GLASS ALIGNMENT & ADJUSTMENT (CURVED & FLAT)	8
INSTALLATION: REFRIG. LINES / STUB-UPS / DRAINS / WIRING DIAGRAMS / VENTILATION ..	9
INSTALLATION: DISPLAY CASE START-UP / REAR STORAGE (MODEL HVOU[L]RSS ONLY) ...	10
INSTALLATION: DISPLAY CASE START-UP, LIGHTS, TEMPERATURE CONTROLLER, SST	11
BAFFLES: AMBIENT VS. REFRIGERATED CONDITIONS	12
OPTIONAL NIGHT AIR CURTAIN INST. / OPER. INSTRUCTIONS (HUDLR / HURLR / HOU)	13
OPTIONAL NIGHT AIR CURTAIN INST. & OPERATING INSTRUCTIONS (MODEL HVLD[L]RSS).	14
SECURITY GRID INSTRUCTIONS (OPTIONAL)	15-16
SECURITY GRID INFORMATION FOR MODEL HVLD[L]RSS ONLY.....	17
DRAIN, HOSE AND BRACKET PLACEMENT ILLUSTRATIONS	18
MAINTENANCE FUNDAMENTALS - STANDARD LIGHT FIXTURES / REAR SLIDING DOORS....	19
MAINTENANCE FUNDAMENTALS - LED LIGHTS/BRACKETS/SHELVES/DRAIN/TXV VALVE	20
MAINTENANCE FUNDAMENTALS - REFRIG. PKG., TEMP. CONTROLLER, EVAP. PAN	21
MAINTENANCE FUNDAMENTALS - HONEYCOMB AIR DIFFUSERS/UPPER SECTION AIR DUCT	22
CLEANING SCHEDULE	23
TROUBLESHOOTING - GENERAL ISSUES	24-26
TROUBLESHOOTING - CONDENSING SYSTEM	27
TROUBLESHOOTING - EVAPORATOR SYSTEM	28
PREVENTIVE MAINTENANCE (TO BE PERFORMED BY TRAINED SERVICE PROVIDER)	29
SERIAL LABEL INFORMATION & LOCATION	30
TEMPERATURE CONTROLLER - CAREL®	31-33
TEMPERATURE CONTROLLER - CPC®	34-35
TECHNICAL SERVICE CONTACT INFORMATION & WARRANTY INFORMATION	36

MODELS LISTED IN THIS MANUAL / DETERMINING THEIR RESPECTIVE CASE DIMENSIONS

DETERMINING YOUR MODEL AND ITS CASE DIMENSIONS:

Note 1. Your model number can be found on serial label at rear of case (near main power switch).

Note 2. Dimensions of most models can be found at www.structuralconcepts.com. Simply enter the case model number into the Product Number Search box. Click the **product specification** link for complete dimensions.

Note 3. If your specific model is not found, contact technical service (phone number is listed at Technical Service section in this manual) for dimensions.

Note 4. CDRs (Customer Design Requests) are listed with a 4-digit number. All CDR dimensions are identical to standard model dimensions.

THIS OPERATING MANUAL ENCOMPASSES THE FOLLOWING MODELS (AND THEIR RESPECTIVE CDRs):

Model HOU3852R
Model HOU4852R
Model HOU5652R
Model HOU7452R
Model HOU9652R.4419
Model HOU9652R.4419A

Model HUDLR3852
Model HUDLR4852
Model HUDLR5652
Model HUDLR7452

Model HVOU56RSS
Model HVOU74RSS
Model HVOU96RSS
Model HVOU144RSS

Model H5C4850LR
Model H5C4850RR
Model H5C5650LR
Model H5C5650RR
Model H5C7450LR
Model H5C7450RR

Model HURLR3852
Model HURLR4852
Model HURLR5652
Model HURLR7452

Model HVOU96RSS.3580B
Model HVOU96RSS.3615A
Model HVOU96RSS.4260
Model HVOU144RSS.3580C
Model HVOU96RSS.3580D
Model HVOU144RSS.3580E
Model HVOU144RSS.4261

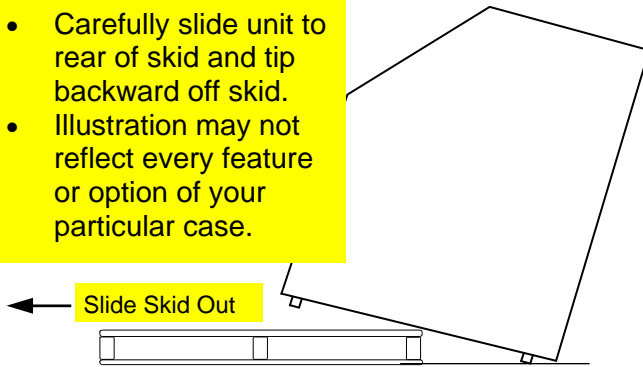
Model HSL3850R
Model HSL4850R

Model HVLD48RSS
Model HVLD56RSS
Model HVLD74RSS

INSTALLATION: REMOVAL FROM SKID, REMOVING LOWER FRONT PANELS

1. Remove Case From Skid (Levelers)

- Remove shipping brace that may be securing case to skid.
- Support case to prevent tipping.
- **Caution! Levelers can be damaged if case hits floor with heavy force!**
- Carefully slide unit to rear of skid and tip backward off skid.
- Illustration may not reflect every feature or option of your particular case.



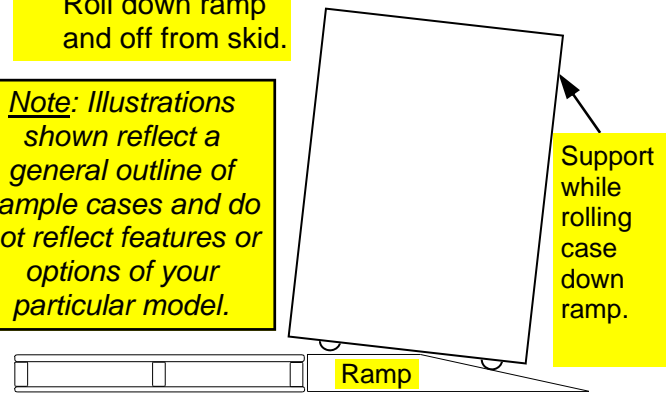
Case can be repositioned with pallet truck when front lower panel is removed. Blocking may be necessary to obtain adequate height.

2. Remove Case From Skid (Casters)

- Remove shipping brackets that may be securing casters to skid
- Place ramp up against skid (to allow case to smoothly slide off from skid).
 - Maintain support of case at all times or center of gravity may cause case to fall.
 - Unlock Casters. Roll unit to rear of skid.

Roll down ramp and off from skid.

Note: Illustrations shown reflect a general outline of sample cases and do not reflect features or options of your particular model.



3A. Removing Angled Lower Front Panels

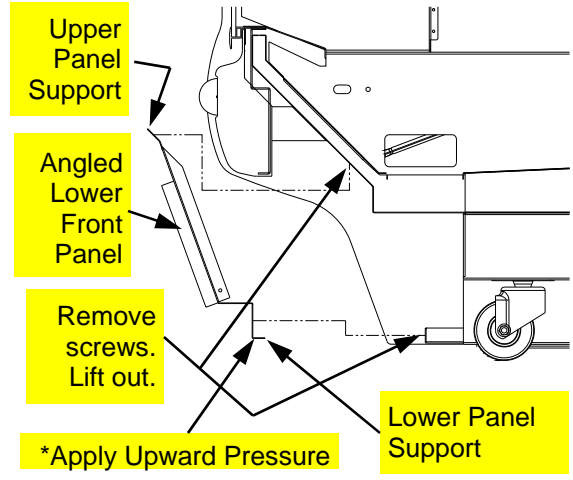
Upper panel support.

- Remove screws located behind upper front panel.

Lower panel support.

- *Most applications*, screws secure the lower panel support (located below front panel) to the unit.

See illustration at right.



3B. Removing Vertical Lower Front Panels

Front Panel Upper Support

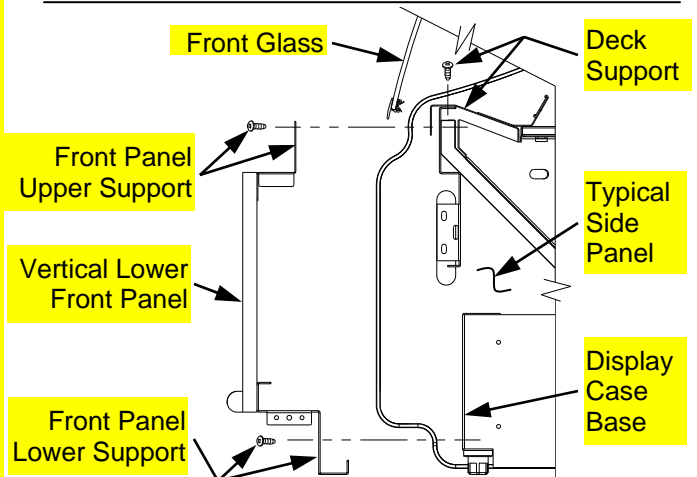
- Lift Front Glass.
- Remove the caps and screws holding Deck Support in place.

Front Panel Lower Support

- For most display cases, screws secure Front Panel Lower Support to Base.
- Remove screws holding Front Panel Lower Support to Display Case Base.

Vertical Lower Front Panel can now be removed (see illustration at lower right).

**Alternate applications (for cases without lower panel screws): Apply upward pressure to lower panel support to disengage lower support panel tabs from slots located in the base at both ends of the unit.*



4. Adjusting Upper Front Panels

- Remove screw cover and loosen adjustment screws.
- Adjust alignment and tighten screws.
- See illustration at mid-right.

5. Bolting and Caulking Units Together

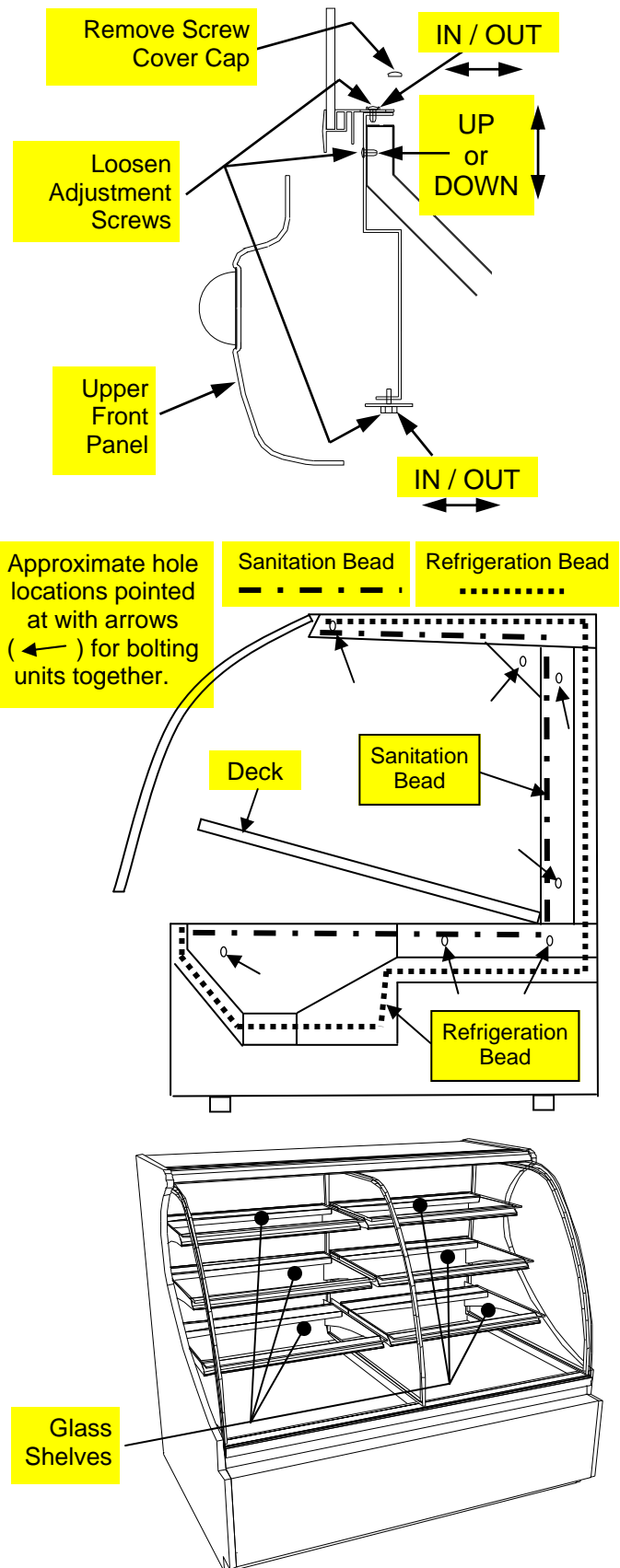
Follow these steps to assure a secure, level lineup.

- Begin all lineups leveling from highest point of floor.
- After the 'first' case is level, apply industrial grade butyl caulk on non-visible areas (at case end). Use industrial grade silicone sealant on visible areas (at case end).
- Form Two (2) Caulk/Sealant Lines: (Sanitation and Refrigeration). See illustration at mid-right for outline of caulk/sealant lines.
- Line up 'second' case bolt-hole to bolt-hole to 'first' case.
- Using SCC-supplied bolts (found in installation packet), insert bolts in bolt hole locations (shown at right). You may need to remove decking to access lower bolt holes.
- Caution! Front of cases MUST be flush with each other! After leveling, all cases to be same height.
- Using SCC-supplied nuts & bolts, **lightly tighten** each of the 5 to 8 bolts in a cross-wise pattern. Work your way around the pattern, tightening more firmly at each pass. **Do not** firmly tighten one bolt and then start on the next!
- After the cases are bolted together, level the 'second' case. Repeat this process for each case to be adjoined.
- After all lined-up cases are level, seal all seams with industrial grade silicone sealant.

6. Glass Shelving

Glass shelving will be packed separately.

- Caution! Carefully remove from packaging.
- Grasp firmly and carefully install.
- *Caution! Check that plastic edging is intact before placing glass shelving onto brackets!*
- Plastic edging must NOT be removed from glass shelves. Contact Structural Concepts for replacement edging (see **TECHNICAL SERVICE CONTACT INFORMATION** section).
- Check that glass shelving is in proper position before placing product in case.
- See illustration at lower-right.



7. Electrical Connections

A. Rear Wire-Ways

- Remove screws from rear wire-way cover to access electrical leads.
- Wiring runs case to case through base cut-outs.
- Knockout is provided in bottom of wire-way for stub-up connection.
- See illustration at top-right.

Note: Wiring process must be performed by certified electricians only.

- Voltage rating is on serial label at case rear.

B. Rear Ballast Box

- Remove 4 screws from ballast box face.
- Remove screws from rear panel (if any).
- Remove 3 screws from inner support.
- Knockouts are located on side and rear of box for making electrical connections.

Note: Wiring process must be performed by certified electricians only.

- Serial label (at case rear) lists voltage rating.

C. Front Ballast Box

- Remove front panel.
- Stub-up connections are in ballast box.
- Remove ballast box covers.
- Knockouts are on sides and front of ballast assembly for making electrical connections.

Note: Wiring process must be performed by certified electrician only.

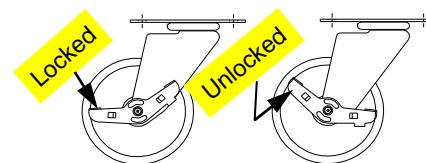
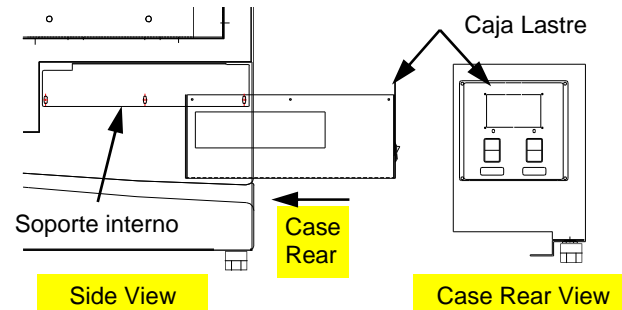
- Voltage rating is on serial label at case rear.

8. Cases With Casters: Lock and Unlock

- To lock casters, press down on lever.
- To unlock casters, pull lever up.
- See illustration at right.

9. Cases With Levelers: Adjust Levelers

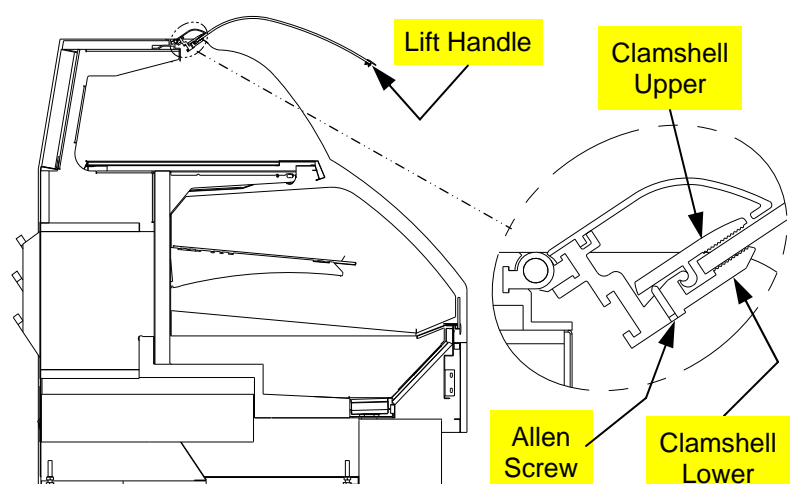
- After case is in position, adjust case so it is level and plumb (see illustration at right).
- You may need to remove front and/or rear Toe-Kick to access levelers.
- Use adjustable wrench (and possibly a pry bar) to adjust leveler.
- Do not use pry bar on toe-kick (it may buckle).
- Do not use pry bar on end panel (it may chip).
- Use pry bar ONLY on base frame to avoid damaging case.
- Use a block to reach base frames with pry bar.
- See illustrations at right.



11. Front Glass Alignment & Adjustment via Clamshell Allen Screw Adjustment

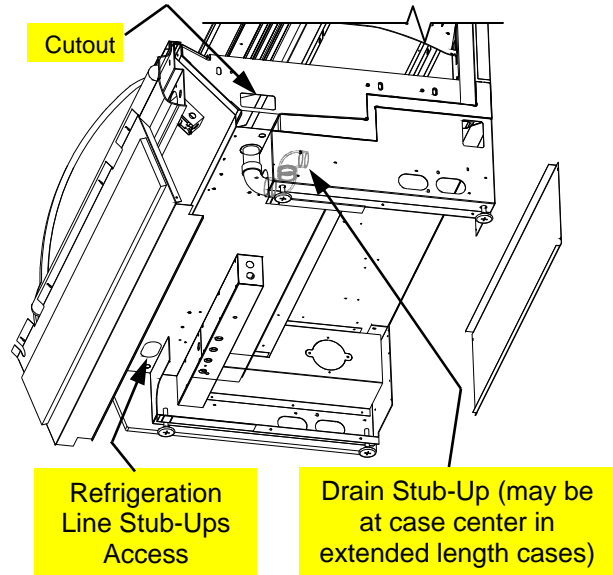
Caution! Glass is extremely heavy! Two people may be required to perform this task.

- Make certain case is level and plumb.
- Lift glass to maximum upright position.
- Determine which side requires realignment.
- While maintaining tight grip on glass, loosen the Allen screws nearest to misaligned side.
- Adjust the glass until properly positioned.
- Allen screws may now be tightened (taunt, but not overly tightened lest glass breakage occur).
- If other side needs alignment, repeat steps while maintaining grip on glass.



12. Refrigeration Line Stub-Up Connections (Remote Units)

- Remove front panel.
- Refrigerant stub-up access opening is at the front on the left hand side of the base (see illustration at top-right).
- Stub-up connections are accessed from inside the case.
 - Remove interior ABS decks.
 - Remove fan shroud assembly.
- Line connections are in the tub front, on the left hand side
- Remove foam material from the entry hole provided in the tub drain trough.
- Route refrigerant lines through access hole.
 - Run case-to-case connections through cutouts in base.
 - Sweat the high and low pressure connections.
- Fill access hole with suitable filler to insure watertight integrity of tub.
- Illustration at top-right may not reflect every feature or option of your particular case.



13. Refrigeration Drain Connection (Remote Units)

- Depending upon drain access needs, either front or rear panel may be removed to gain access to drain stub-up.
- 1.5" male PVC stub-up connection is under the case on the right hand side.
- Drain stub-up may be at case center in extended length cases.
- Connect tub drain to floor drain. Maintain 1/4"-fall per foot to provide proper drainage.
- Illustration at top-right may not reflect every feature or option of your particular case.

14. Evaporator Pan / Drain Position (Self-Contained Units)

- Remove the Rear Panel by lifting up & out.
- Slide the Condenser Unit out from case.
- Condenser Unit access is now available.
- Insure that the evaporator pan is installed under the PVC condensate drain trap.
- Insure that the evaporator pan is plugged into the receptacle inside base.
- Lower rear panel back into place.

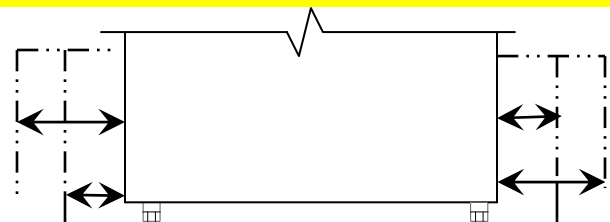
- See **Drain, Hose and Bracket Placement** section in Operating Manual for details.

15. Electrical Wiring Diagram

- Each case has its own wiring diagram folded and in its own packet.
- Wiring diagram placement may vary; it may be placed near condenser fan cover, ballast box, raceway cover, or other related location.

16. Ventilation and Clearance

- **Self-Contained** refrigerated cases must maintain airflow clearance of 6" (minimum) to 12" (recommended) at front and rear.
- Restriction of air can void warranty.
- Illustration below may not reflect every feature or option of your particular case.



Check air grilles for obstructions. Maintain airflow clearance of 6" (min.) to 12" (recommended) at front & rear.

17. Display Case Start-Up

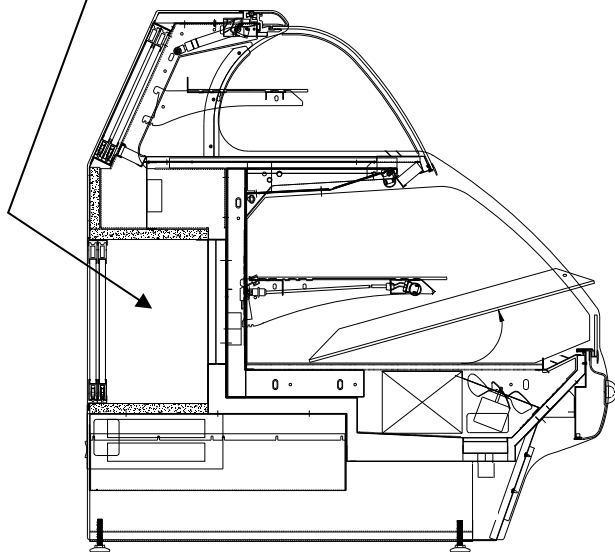
A. Case

- Turn main power on at case rear.
- From the front of the case, lift curved front glass by grasping lift handle and raising (see illustration at right).
- Lift deck to check that coil fans are running.
- Coil fans (and in self-contained units, compressor motor) should turn on.

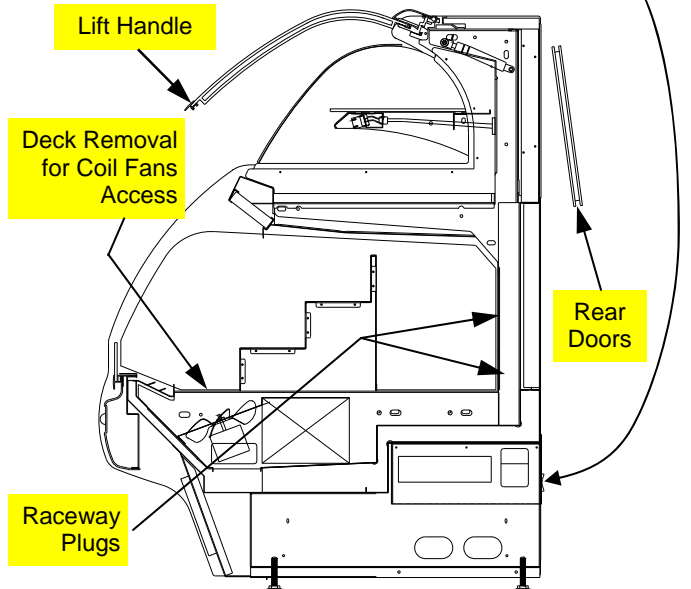
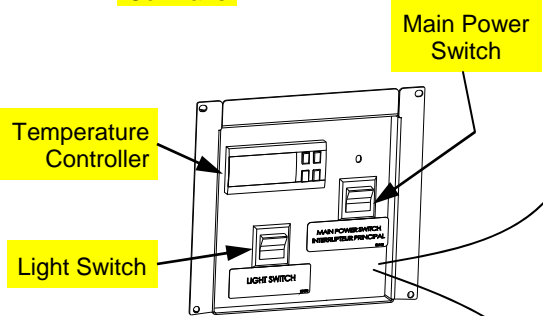
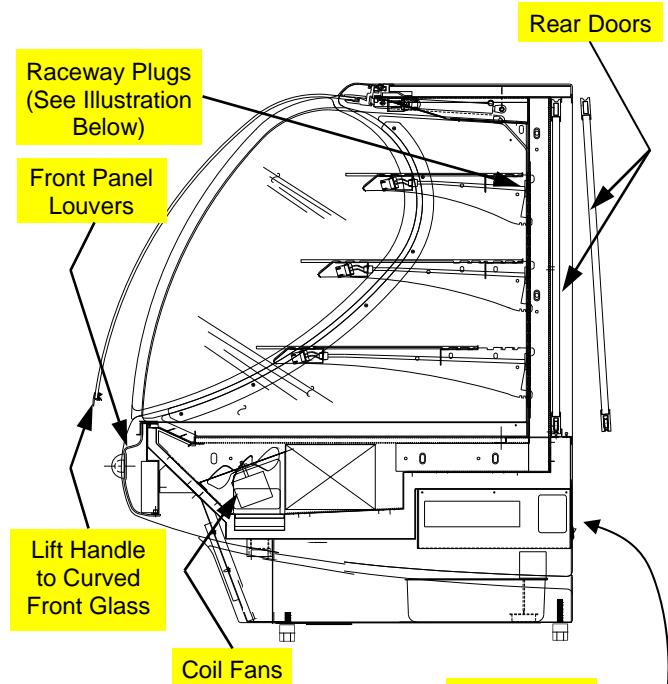
B. Rear Storage (Model HVOU[L]RSS only)

- Illustration below reflects view of rear storage area on model HVOU[L]RSS.
- Rear sliding doors provide access to area.

Rear Storage with Access via Rear Sliding Doors

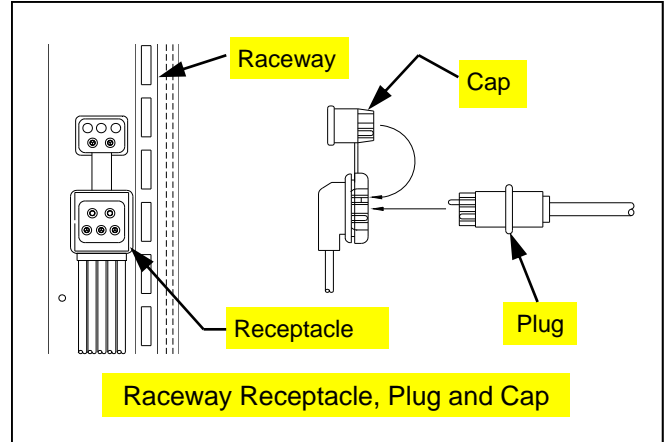


Model HVOU[L]RSS: Rear Storage with Access via Rear Sliding Doors




C. Lights


- Turn lights on.
 - ⇒ Self-Contained units: Switch at rear.
 - ⇒ Remote cases: NO SWITCH (lights come on when main power switch is turned on).
- All lights should come on at the same time. First time lighting may require a short warm-up period.
- Slightly dim / flickering of new bulbs is normal. If lights do not turn on, check raceway plugs.
- Lighting is wired in series so **all lights must be plugged in or receptacles capped** for case lights to be on. See illustration below right.
- LED Lights: If lights do not come on, check that plug is properly inserted into socket.



D. Temperature Controller (All Self-Contained Units and some Remote Units)

- Check that compressor symbol light is on.
- Depending upon SCC-Supplied temperature controller, compressor is identified with either:

 Compressor symbol (common in Carel® temperature controllers).

 Snowflake symbol (common in CPC® temperature controllers).

- After case has run for a few minutes, check that temperature starts to drop.
- If temperature controller does not begin cooling (in a few minutes) see temperature controller section in this operating manual for instructions.
- Remote units (without temperature controller on case): Verify that refrigeration requirements listed on serial label (found on the case) are being met.

E. Saturated Suction Temperature (Remote Units)

- See serial label on case for suction temperature requirements and BTU requirements.
- See serial label on case for defrost schedule and temperature termination parameters.

Sample Carel® Controller Face

Sample CPC® Controller Face

BAFFLES: AMBIENT VS. REFRIGERATED CONDITIONS

Baffles: Ambient vs. Refrigerated

Certain sections of the case can be either ambient or refrigerated (depending upon type of product being displayed).

A Dual-Purpose Baffle is provided to facilitate desired condition. It is accessible through rear doors.

The Baffle will prevent (or allow) refrigerated air from circulating through the display area and returning through the Air Return Grille.

1. For Ambient (Non-Refrigerated) conditions, Baffle must be positioned to block air flow. See photo #1 at top right.
Note: Depending upon model, options and features chosen, photos may not exactly reflect every aspect of your particular case.
 2. To switch from Ambient to Refrigerated condition, lift Baffle up and out of air chamber. Rotate 90 degrees so arrows on the tag point down and tag is to the rear of the case. Lower Baffle, with slots facing up, back down into the air chamber. See photo #2 at mid-right.
 3. For Refrigerated conditions, Baffle is positioned to allow air to circulate through display area and return through Air Return Grille. See photo #3 at lower-right.
- Note: To clean, remove Baffle from case, brush out crumbs or residue from Baffle. Wipe down with clean rag dipped in mild soap and water solution.

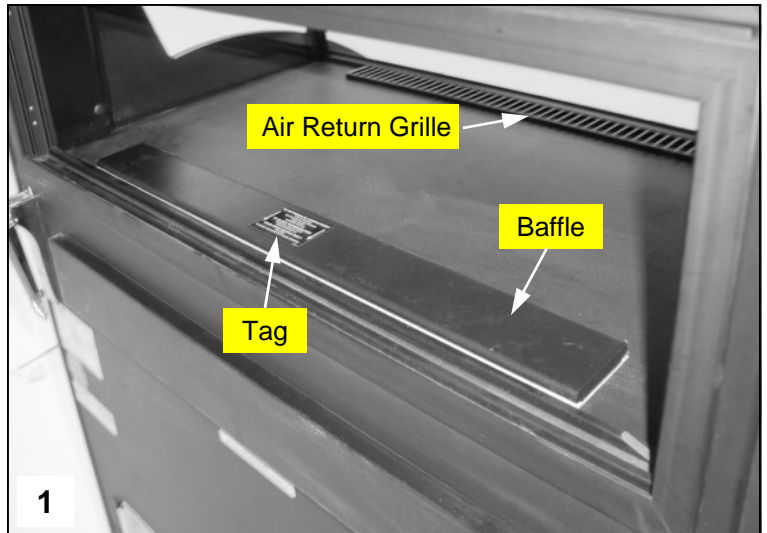
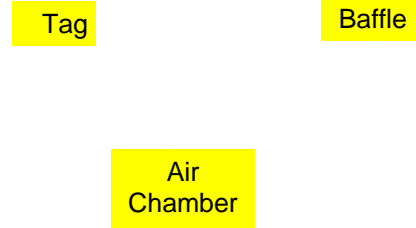


Photo of Baffle in Ambient (Non-Refrigerated) Position



2

Photo of Baffle Removed From Chamber



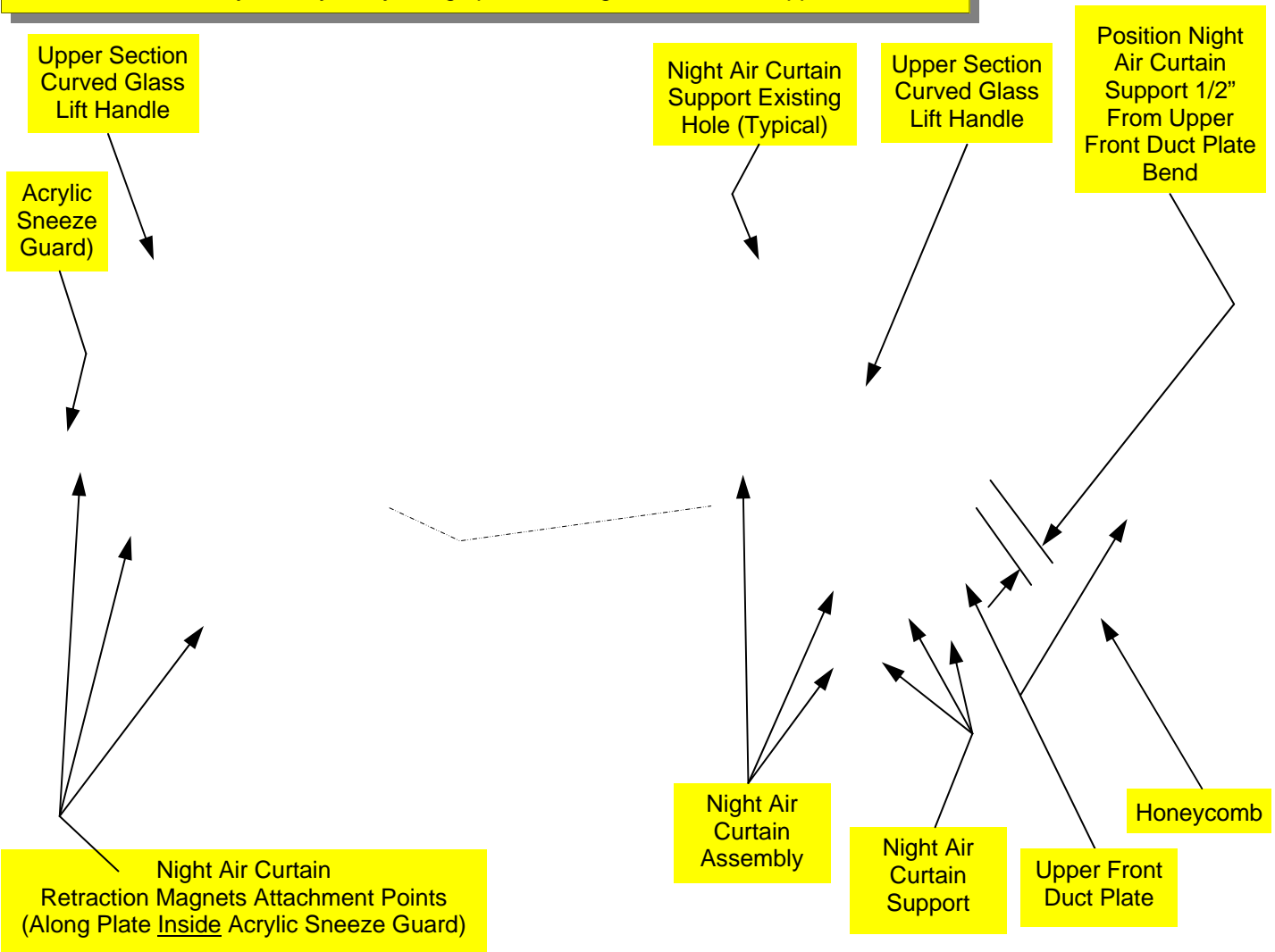
3

Photo of Baffle in Refrigerated Position. Note: Airflow Direction

Night Air Curtain Installation & Operating Instructions

1. Use caution when handling Night Air Curtain.
2. Display case may come with Night Curtain already attached. If not, a retrofit kit will be provided. If using SCC-supplied retrofit kit, attach the Night Air Curtain Support to the existing Upper Front Duct Plate (see illustration below). To attach, grasp the lift handle of the Upper Section Curved Glass and lift upward; hydraulic cylinder will keep glass raised. Use the Night Air Curtain Support (as a template) by placing it 1/2" from Upper Front Duct Plate Bend (as shown below). Mark locations of existing hole(s) onto Upper Front Duct Plate. Drill clearance holes for #10 screws at these points.
3. Place Night Air Curtain Support into position and use the SCC-supplied screw(s) to attach it to the Upper Front Duct Plate (where pilot hole[s] were just drilled).
4. Upper Section Curved Glass may now be lowered back into closed position.
5. Night Air Curtain Assembly may now be placed on the Night Air Curtain Support. Carefully positioned magnets will keep in place. Grasp handle and pull downward to desired location INSIDE acrylic sneeze guard (see illustration below).
6. To return Night Air Curtain to its retracted position, grasp handle, lift up and away from its magnetic attachment and carefully wind Night Air Curtain back into roll.
7. Caution! Do not allow spring-loaded Night Air Curtain to freely snap back into roll. Doing so can eventually destroy Night Air Curtain's tension and retractability.
8. Note: Due to ONLY the magnets keeping Night Air Curtain Assembly in place, it may be removed at any time by firmly lifting up and off Night Air Curtain Support.

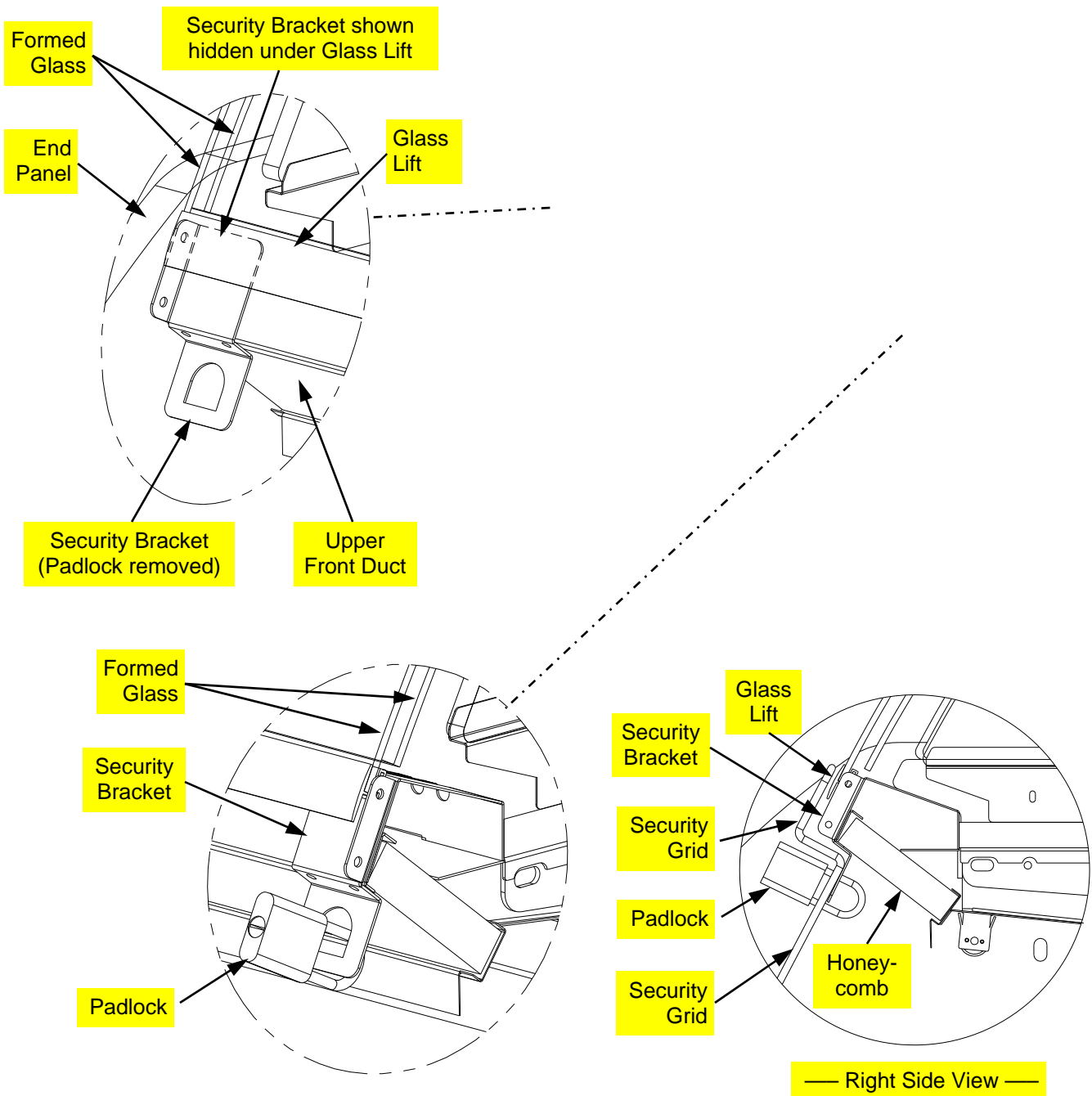
NOTE: THE BELOW ILLUSTRATION MAY NOT EXACTLY REFLECT EVERY PARTICULAR CASE'S FEATURES OR OPTIONS.



Initial Positioning and Installation of Security Brackets

1. Illustration below has Security Grid removed and end panel removed for more precise viewing.
2. Attach Security Brackets (one at each end) to Upper Front Duct AND to end panel. Use No. 10 black screws to securely position Security Brackets before installing Security Grid.
3. The next page in this manual will show how to position and install the Security Grid.
4. Right Side View shows illustration of Security Brackets after Security Grid installed.

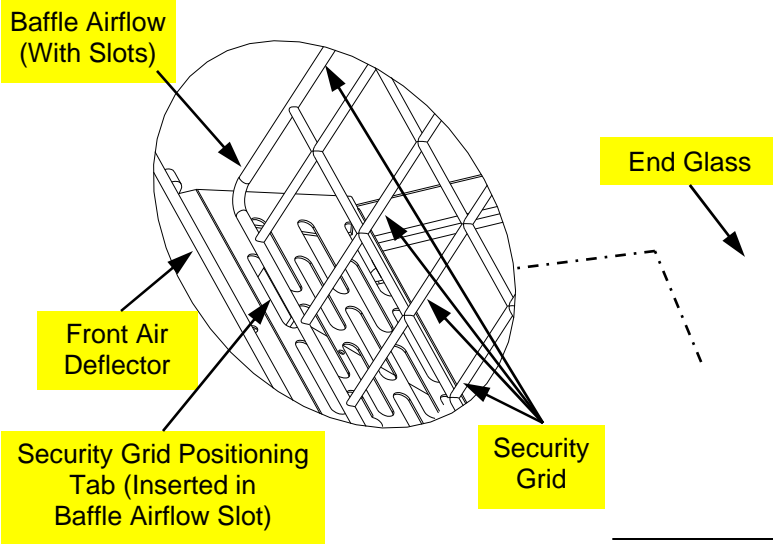
NOTE:
ILLUSTRATION
MAY NOT
EXACTLY
REFLECT YOUR
CASE'S
FEATURES OR
OPTIONS



Initial Positioning and Installation of Security Grid

1. Due to weight and size, Security Grid installment requires two (2) people.
2. After hoisting Security Grid directly over Front Air Deflector, drop the (2) Security Grid Positioning Tabs into the Baffle Airflow Slots (see enlarged view below).
3. After securely positioned in the Baffle Airflow Slots, carefully and slowly lean the Security Grid back against the two Security Brackets.
4. Enlarged View (shown below) shows Security Grid Positioning.
5. Tabs must be securely positioned into Baffle Airflow Slot. There is one Security Grid Positioning Tab on each end of Security Grid.
6. Tabs must be securely positioned in both Airflow Slots prior to locking with Padlocks.

NOTE:
ILLUSTRATION
MAY NOT
EXACTLY
REFLECT
YOUR CASE'S
FEATURES OR
OPTIONS

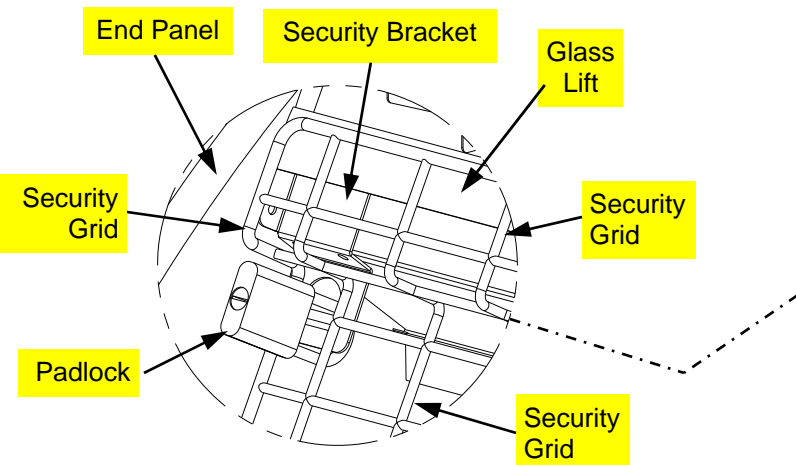


Securing Security Grid Into Place and Locking

7. After leaning the Security Grid back against the two Security Brackets, slide the (two) Padlocks through the Security Grid and the Security Brackets.
8. Securely lock the Padlocks (one Key fits both Padlocks).

Removing and Storing Security Grid and Locks

9. Due to weight and size, Security Grid removal requires two (2) people.
10. Unlock and remove Padlocks. Lean Security Grid forward. Lift upward and out of Baffle Airflow Slots.
11. Store Security Grid, Padlocks and Keys in a secure location to prevent theft or damage.



SECURITY GRID INFORMATION FOR MODEL HVLD[L]RSS ONLY

DRAIN, HOSE AND BRACKET PLACEMENT ILLUSTRATIONS

NOTE: BELOW ILLUSTRATIONS MAY NOT EXACTLY REFLECT EVERY PARTICULAR CASE'S FEATURES

Warning! Disconnect power before providing maintenance and service to unit.

Caution: Lamps are treated to resist breakage and must be replaced with similarly treated lamps.

Note: Warranty will be void if claims arise from negligence, misuse of goods, extreme environmental conditions or improper maintenance. See Overview And Warnings section in manual.

Rear Sliding Doors

Note: Doors are not interchangeable. There is an inner and outer door. Outer door must be removed first and replaced last. See illustration at top-right.

- The outer door is the right hand door (from the service side or rear of case).
- Move doors toward the center of the case.
- Individually lift each door up toward the top of the case; pivot the bottom of the door out.
- Replace rear sliding doors in reverse order they were removed.

Light Fixtures

Note: Depending upon model and options, light fixtures can have either single or dual lamps.

Light fixtures are located on underside of shelf assemblies and at the top inside of case. See illustration at right for general locations.

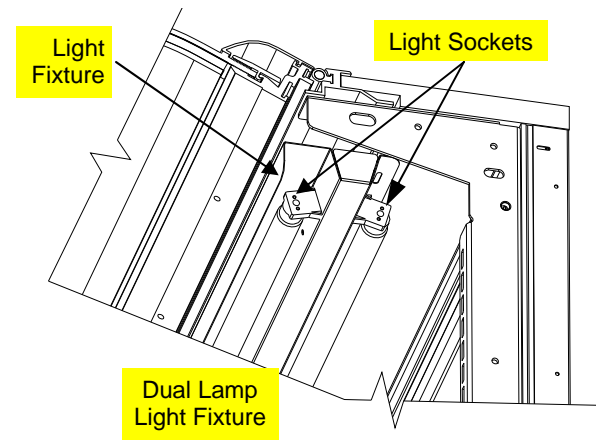
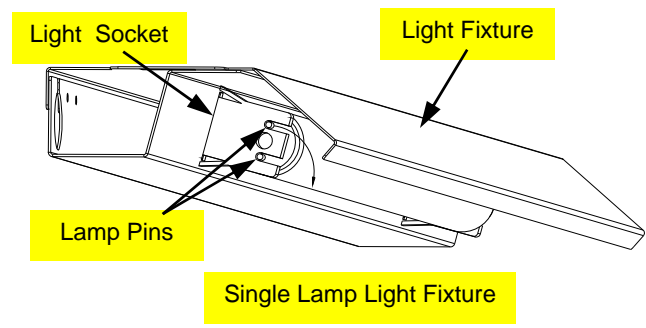
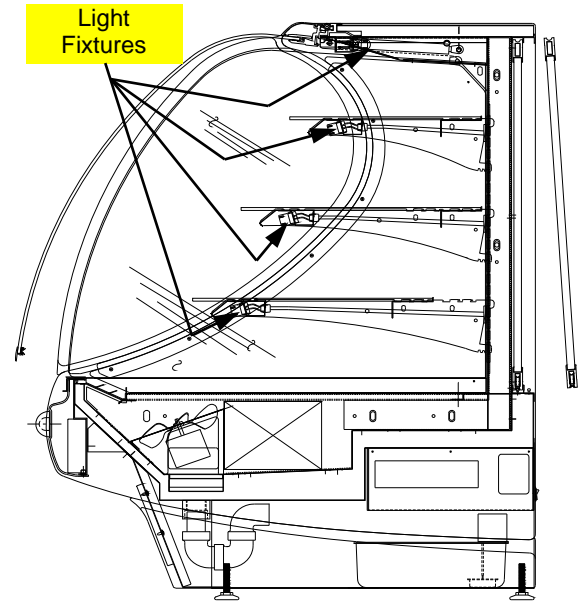
Removal of lamps:

- Rotate lamp (1/4-turn) to disengage (upper or lower) pins/contacts from mounting sockets.
- Remove bulb by applying even pressure from back side at the bulb ends and pulling the remaining contact from sockets.
- See illustrations at mid and lower-right.

Installation of lamps:

- Align pins with slot.
- Insert pins into socket by rotating the bulb 1/4-turn to secure either the (upper or lower) pin contacts into the sockets.
- Rotate remaining bulb contacts (1/4-turn) into remaining lamp mounting socket contacts.
- See illustrations at right.

See next page for LED Light Fixture information.



LED light removal / replacement:

- LED lights they rarely require change-out.
- Contact Structural Concepts' Technical Service Department for replacement parts (see Technical service section of this guide).
- To remove LED light fixture, disconnect existing LED light from its brackets & self-adhesive tape.
- Then, firmly grasp LED light while applying outward pressure to brackets.
- Twist the LED away from the bracket to release.

Plug and cord positioning:

- Plug is to connect to LED light at raceway side of case.
- Before attaching LED light to case, plug must connect to LED properly without cord doubling-back.
- See photos of proper vs. improper connections.

Proper plug insertion into LED light:

- Plug must be inserted into LED light properly or the LED will not light up.
- Oval form of plug is to connect to LED light oval form.
- See illustration at right.

See previous page for Standard Light Fixture information.

Bracket Retainer Removal

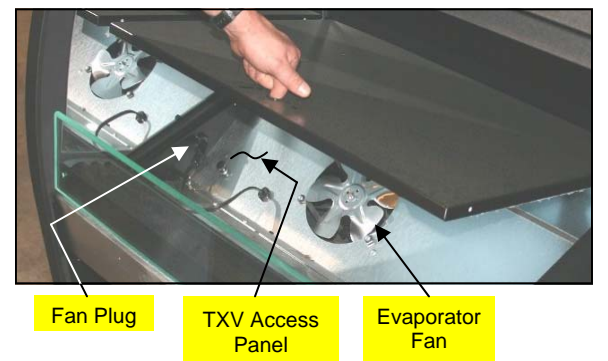
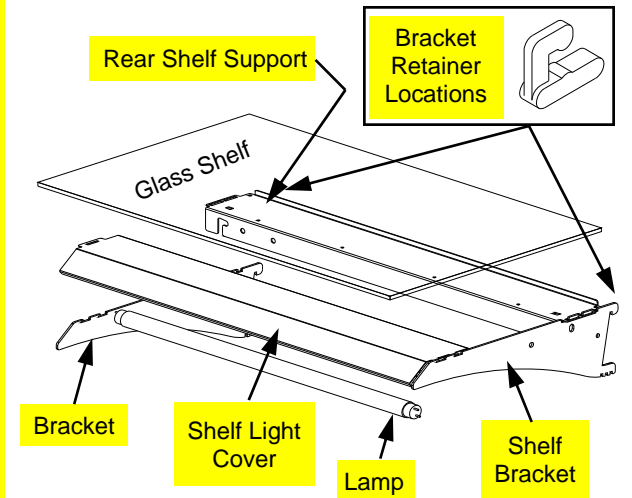
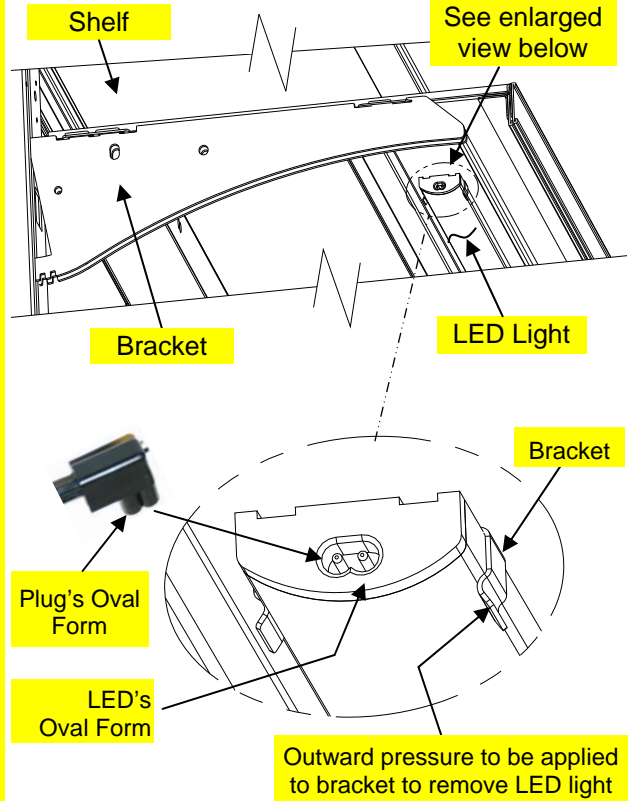
- To remove brackets, it may be necessary to remove the nylon shipping bracket retainers.
- Pliers will be required to accomplish this task.
- See illustration at top-right for location of bracket retainers.

Shelf Assembly Removal

- Remove glass shelves
- For lighted shelving, unplug the light cord.
- Remove rear shelf support.
- Remove shelf light cover from brackets.
- Lift brackets up and out.

Drain and Expansion Valve Access

- The drain and expansion valve are both accessible from the front of the case.
- Unplug the fans (one plug per side) and remove the fastener from the access panel in the front right (or left) corner of the unit.
- The drain and the expansion valve (TXV) are directly below the access panel.



Refrigeration Package Access

Note: Servicing to be accomplished by licensed electrical / refrigeration contractor.

Air Filter

- Magnetic strips attached to air filter will hold it in place on rear grille.
- See **CLEANING SCHEDULE: TO BE PERFORMED BY STORE PERSONNEL** for cleaning instructions.
- See illustrations at top-right.

Slide Out Refrigeration Package

- Remove the rear grille. Grille may be slid upward and out or removal of two screws may be required.
- **Note:** At initial slide-out, it may be necessary to remove Compressor Pan Shipment Screws (see illustration at right for location).
- *Refrigerant lines are flexible to facilitate rear access maintenance.*
- Plastic glides are mounted at base to assist in sliding the condenser out for access.
- Service connections are at the left of compressor.
- Slide condenser unit out 12 to 18 inches to access high pressure service connection.

Temperature Controller (Self-Contained Units Only)

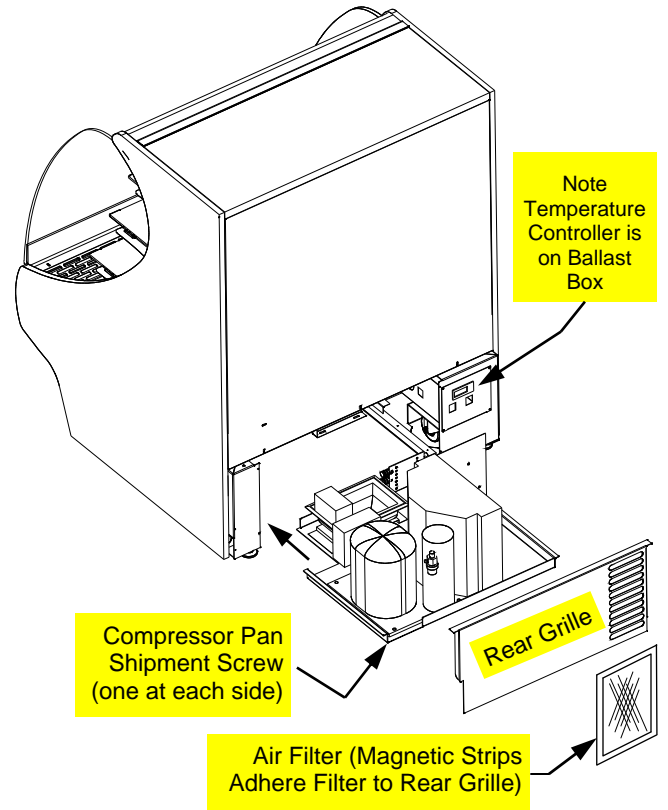
- Temperature Controller is located in the Ballast Box.
- Temperature / Defrost control settings are programmable from these locations.
- Case Temperature Set Point is set at the factory, as determined by case size & sensor probe location.
- Temperature is controlled by thermostat.
- If a temperature setting change is required, follow instructions regarding Temperature Control Programming Steps in the technical information section of this operating manual.
- If service is required to the temperature control unit, call your Master Service Agent. Maintenance should be performed by a certified technician.
- The toll-free number is listed in the Technical Service section of this manual.
- See Temperature Controller section in this manual.

NOTE: Spirit-filled thermometers located in the refrigerated compartment are for monitoring warmest air temperature in accordance with NSF Std. 7

Evaporator Pan Access / Removal

- Turn off main power; allow evaporator pan to cool.

The Illustration below may not depict an exact representation of your particular unit.



Note: Illustration shown above may not exactly reflect your case's refrigeration package layout.

- Lift Rear Grille up and off (no tools required).
- **WARNING! Evaporator Pan May Be Hot!** Check temperature of pan prior to handling.
- Withdraw evaporator pan from the right side behind electrical box.
- Unplug evaporator pan from the electric outlet.
- Empty evaporator pan contents into suitable container. Replace rear panel when completed.

Cleaning to be performed on regular intervals. See CLEANING SCHEDULE - TO BE PERFORMED BY STORE PERSONNEL and PREVENTIVE MAINTENANCE (TO BE PERFORMED BY TRAINED SERVICE PROVIDER) sections for schedules.

Air Duct - Upper Section (see illustration at top-right)

- Depending upon model, Upper Section Air Duct may be removable for cleaning. If so, simply lift Air Duct up and out of chamber to access area to clean.
- If Upper Section Air Duct is not removable from case, Honeycomb removal will allow access to area.
- Clean with brush or vacuum with brush attachment.
- Wipe down with moist cloth.

Honeycomb Air Diffuser Removal

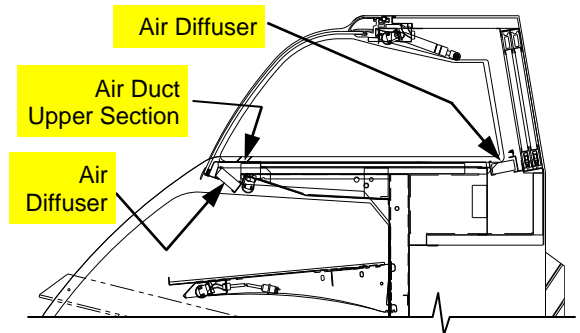
- Wedge non-metallic device of suitable strength (such as a ballpoint pen) between honeycomb and end panel.
- Caution!** Use care not to dislodge the heating wire (that prevents condensation on the lamp assembly).
- Apply pressure to collapse the honeycomb to allow it to be pulled out of honeycomb retainer.
- Pry downward and away from honeycomb retainer.

Clean honeycomb with warm water and soap solution. Submerge if necessary. Use brush to dislodge stubborn or sticky residue. Dry by using vacuum's 'blow mode'.

Honeycomb Air Diffuser Installation

- Squeeze honeycomb into the honeycomb retainer.
- Carefully slide honeycomb into place.
- Adjust honeycomb so that it fits flat against retainer. It must not be wavy or out of position.

Note: For honeycomb air diffusers in other locations, these same general instructions apply.



CLEANING SCHEDULE - TO BE PERFORMED BY STORE PERSONNEL

AREA	FREQ.	INSTRUCTIONS
Exterior	Daily	All Glass / Mirrors: Clean side glass, front glass, glass shelves, and mirrors with household or commercial glass cleaner. Clean out door track with moist cloth.
	Daily	Rear Sliding Door Exterior Glass: Clean with household or commercial glass cleaner.
	Daily	End Panels, Front Panel, Toe-Kick, etc.: Wipe off all surfaces with warm water and mild soap solution and non-abrasive cloth.
	Weekly	Wood, Laminate and Painted Surfaces: Clean with mild soap and water solution and a soft cloth .
	Weekly	Acrylic: Clean with warm water, mild soap solution and soft cloth; acrylic cleaning solutions are also available. Caution! Never use ammonia-based cleaners on acrylic. Incorrect cleaning agents or abrasive cleaning cloths cause surface to 'cloud' over time.
	Weekly	Air Filter (with Magnetic Strips) on Outside of Rear Grille: Remove air filter. Rinse with hot water against air flow direction. Use mild detergent to remove smoke and grease stains.
	Monthly	Condensing Coil: Remove rear grille. Vacuum or brush grille area on back of case; clean dust and dirt collecting on condenser coil. Avoid damaging fins.
	Monthly	Under Case Cleaning: Remove front toe-kick (or rear grille). Vacuum under case to remove all dust and dirt. Replace front toe-kick (or rear grille) when complete.
Interior	Weekly	Decks: Wipe off decks with moist cloth dipped in mild soap and water solution.
	Monthly	Tub and Drain: Keep clean and free of debris which could clog tub and drain. To access drain area, remove the deck and fan shroud. <ul style="list-style-type: none"> • Vacuum tub under deck. • Direct the drain to a floor drain or a bucket. • Run hose into drain to flush out debris. Carefully hose out the tub. • Caution! Avoid splattering water over the case and surrounding areas!
	Monthly	Air Return Grille and Fan Shroud Area: 1) Turn off power. 2) Remove decks from case. 3) Clean with moist cloth.
	Monthly	Honeycomb Air Diffuser: See MAINTENANCE FUNDAMENTALS - HONEYCOMB AIR DIFFUSERS section in this manual for cleaning instructions.
	Monthly	Air Duct - Upper Section: See MAINTENANCE FUNDAMENTALS - HONEYCOMB AIR DIFFUSERS / UPPER SECTION AIR DUCT section for specifics.

CONDITION	TROUBLESHOOTING
Case Not Lining Up	See Installation Section for instructions on properly aligning case (alongside other cases) and adjusting levelers.
Water Is On The Floor	<p>Caution! Water on flooring can cause much damage! Until cause is determined (and repaired), following these procedures:</p> <ul style="list-style-type: none"> • Use wet-dry vacuum (or mop & bucket) to remove standing water. • Use 'catch pans' for water to drain into. Swap out regularly until case has completely drained. <p>Note: See <i>Drain, Hose and Bracket Placement Illustrations</i> sheet in this manual for views of different evaporator systems used in display cases.</p>
	Check that the drain trap is free of debris.
	Check that the drain hose is correctly positioned over evaporator pan (or floor drain, for remote units).
	Check store conditions. To prevent condensation in NSF® Type 1 environments, maximum conditions are to be 55% humidity / 75° Fahrenheit. For NSF® Type 2, maximum conditions are to be 60% humidity / 80° Fahrenheit. See serial label (at case rear near main power switch) for NSF® Type of your case.
	Check evaporator pan float for proper operation (Heat Rod Evaporator System only).
	Check that evaporator pan is plugged in.
	<p>Caution! Evaporator pan may be malfunctioning (Electrical Heat Rod Evaporator system). If so, water will overflow pan and seep onto flooring causing damage! Until evaporator pan is functioning (or is replaced), following these procedures:</p> <ul style="list-style-type: none"> • Use wet-dry vacuum (or mop & bucket) to remove standing water. • Use 'catch pans' for water to drain into. Swap out regularly until case has completely drained.
	<p>Caution! Disruption of power can cause water to overflow pan and seep onto flooring causing damage! Check that power to case is constant. Until power is restored, following these procedures:</p> <ul style="list-style-type: none"> • Use wet-dry vacuum (or mop & bucket) to remove standing water. • Use 'catch pans' for water to drain into. Swap out regularly until evaporation of case is complete (or until power is restored). <p>When power to case is restored, evaporator pan should function properly and water will no longer overflow onto flooring.</p>
	<p>Wicking material may be dirty or worn and need replacement (Hot Gas Evaporator system).</p> <ul style="list-style-type: none"> • Slide refrigeration system out from under unit. • After refrigeration system has been carefully slid out from under unit, replace wicking material with new. If wicking material is not available, contact Structural Concepts®. See toll-free number at last page of this operating manual.

CONDITION	TROUBLESHOOTING
Fan Emits Excessive Noise	Check that the case is aligned, level and plumb.
	Check evaporator fan for cleanliness.
	Unplug fan motors; check motor shaft for excessive bearing wear.
	Check that fan motors are securely mounted in brackets.
	Verify that fan blades are securely mounted to fan motor.
	Check that nothing is preventing blade rotation.
	Check that the fan shroud is properly secured.
Fans Are Not Working	Check that the MAIN power switch (if present) is on.
	Check that fans are plugged in to fan shroud.
	Check for foreign material obstructing fan performance.
	Check that fan blades freely rotate within fan shrouds.
	Check that power is going to fans.
	Check that fan wiring is connected on terminal blocks.
System Is Not Operating	Check that the utility power is on.
	Check that the MAIN power switch is on.
	Check the circuit breaker box for tripped circuits.
	Check that the unit is properly plugged in (self contained unit).
Case Is Not Holding Temperature	If a large amount of warm product was added to the case, it will take time for the temperature to adjust. Product should be pre-chilled before placing in display case.
	Check Temperature Controller section in this manual.
	Check that the case is not in the sun or near a heat or air conditioning vent.
	If case is located near outside doors, temperature fluctuation can hinder unit's ability to maintain temperature.
	Check air grilles for obstructions. Maintain airflow clearance of 6" (minimum) to 12" (recommended) at case front and rear.
	Check sight glass for flashing and/or low charge.
	Check Set Point Temperature; it may be adjusted too high.

CONDITION	TROUBLESHOOTING
Case Lights Are Not Working	Check that Light switch is in the ON position (self-contained cases only). Remote case lights come on at start-up.
	Check for burned out bulbs. Turn lights off & replace.
	Clean dirt and dust from the bulbs to prevent flickering.
	Check to insure voltage at ballasts. If voltage is entering but not exiting the ballast, ballast is faulty.
	Check that ALL lights are plugged in and receptacles capped.
	LED lights only: Check that plug is properly plugged into LED light. See MAINTENANCE FUNDAMENTALS - LED LIGHT FIXTURES section in this manual for illustrations.
Control Display Is Flashing	Check Temperature Controller section in this manual.
Condensing Unit Is Not Operating (Self-Contained Units Only)	Check Temperature Controller section in this manual.
	Check that the power is turned on.
	Review Temperature Controller's Settings for accuracy.

TROUBLESHOOTING - CONDENSING SYSTEM (QUALIFIED SERVICE TECHNICIANS ONLY)

CONDITION	TROUBLESHOOTING
Head Pressure Too High	Check that the Condensing Coil is not dirty or covered.
	Check that Condensing Fans are working.
	Check that the refrigeration system is not overcharged.
	Check that case is free of non-condensables.
	Check that the Liquid Line Drier Filter is not plugged.
	Check Set Point temperature; it may be adjusted too high.
	Check System Operating temperatures.
	Check that Store Ambient temperature isn't above maximum allowed. See <i>Overview and Warnings</i> Section.
Head Pressure Too Low	Check that Refrigerant Charge isn't too low.
	Check that Suction Pressure isn't too low.
	Check to verify that Compressor Valves aren't faulty.

TROUBLESHOOTING - EVAPORATOR SYSTEM (QUALIFIED SERVICE TECHNICIANS ONLY)

CONDITION	TROUBLESHOOTING
Low Suction Pressure	Check for low refrigerant.
	Check that Expansion Valve isn't restricted.
	Check that Liquid Line or Filter isn't restricted.
	Check that Evaporator Motors are working.
	Check for Superheat setting.
	Check that the Thermostatic Element charge isn't depleted.
	Check that the Coil is not iced up.
High Suction Pressure	Check that Refrigerant Charge isn't too high.
	Check that Compressor Valves aren't faulty.
	Check that there is no air seepage around Condensing Coil.
	Check that the Cooling Load isn't high.
	Check that Superheat adjustment isn't low.
	Check TXV Bulb Installation a. Poor thermal contact. b. Warm location.
	Check Compressor: Low capacity means it is undersized for its application.

PREVENTIVE MAINTENANCE (TO BE PERFORMED BY TRAINED SERVICE PROVIDER)

WARNING! TURN OFF CASE BEFORE PERFORMING PREVENTIVE MAINTENANCE!

PREVENTIVE MAINTENANCE	FREQUENCY	INSTRUCTIONS
Case Exterior	Monthly	<p>Condensing Coil: <i>Note:</i> The vacuum 'blow mode' is to be used when cleaning the condenser coil. Follow these steps:</p> <ol style="list-style-type: none"> Remove grille; use vacuum and brush to dislodge and remove dust on and in coil Place damp rags around condensing fan motor brackets to collect airborne dust. Using vacuum (in 'blowing' mode), blow air through condenser coils and into fans. Make certain to blow entire surface of condensing coils to assure that all entrenched dust is removed. Caution! Coil fins are sharp. Handle with care! Replace Rear Grille to case (4 screws).
	Quarterly	<p>Under Case Cleaning: Once refrigeration package is clear of unit, vacuum under case to remove all dust and dirt that may collect under case.</p>
Case Interior	Quarterly	<p>Honeycomb Air Diffuser: See <i>MAINTENANCE FUNDAMENTALS - HONEYCOMB AIR DIFFUSERS</i> section in this manual for cleaning instructions.</p>
	Quarterly	<p>Evaporator Pan: <i>Caution! Disconnect from receptacle box.</i></p> <ul style="list-style-type: none"> Remove mounting screws from base. Use de-scaling solution (such as CLR® that will prevent corrosion, lime and rust) to clean pan. Rinse thoroughly; do not submerge in water. Reattach pan to case with same mounting screws. Reconnect power cord to receptacle box.
	Quarterly	<p>Compressor Area: <i>Caution! Be certain to disconnect power from case before cleaning Compressor Area!</i></p> <ul style="list-style-type: none"> Slide/Roll compressor package out from under case. Use moist cloth to wipe off dust & debris that collects on various parts. Slide/Roll compressor package back under case.
	Quarterly	<p>Tub, Coil, Drain, Fan Blades, Motors, Brackets: <i>Disconnect power from the case before cleaning the Tub, Coil, Fan, Motor and Drain Area!</i></p> <ul style="list-style-type: none"> Remove Decking, Sub-Deck and Fan Shroud. Use vacuum to clean Evaporator Coils. Clean Tub, Coil and Drain with warm water, clean cloth, brush and mild soap solution. Remove any debris that may clog drain. Clean Fan Blades, Motors and Brackets by wiping down with moist cloth.





Structural

Concepts

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STRUCTURAL CONCEPTS CORPORATION TECHNICAL SERVICE

Call 011-52-55-91-71-9151 For Your Master Service Agent

Also, on the Web at www.StructuralConcepts.com/Contact/Master_Service_Agents.asp

WARRANTY INFORMATION

All sales by Structural Concepts Corporation (SCC) are subject to the following limited warranty. "Goods" refers to the product or products being sold by SCC.

Guarantía Geografía: Es garantía para los equipos vendidos a los establecimientos en los Estados Unidos, Canada, Mexico y Puerto Rico. Equipment sold elsewhere may carry modified warranty.

Warranty; Remedies; Limitations. SCC warrants that if any Goods are found by an authorized representative of SCC not to be of good material or workmanship within one year of the date of shipments SCC will, at its option after inspection by an authorized representative, replace any defective Good or pay the reasonable cost of replacement for any such defective Goods, provided that written notice of the defect is given to SCC within 30 days of the appearance of such defect. If notice is not given within such period, any claim for breach of warranty shall be conclusively deemed to have been waived and SCC shall not be liable under this warranty. If SCC is unable to repair or replace the defective Goods, SCC shall issue a credit to the Purchaser for all or part of the purchase price, as SCC shall determine. The replacement or payment in the manner described above shall be the sole and exclusive remedy of Purchaser for a breach of this warranty. If any Goods are defective or fail to conform to this warranty, SCC will furnish instructions for their disposition. No Goods shall be returned to SCC without its prior consent.

SCC's liability for any defect in the Goods shall not exceed the purchase price of the Goods. SCC SHALL HAVE NO LIABILITY TO PURCHASE FOR CONSEQUENTIAL DAMAGES OF ANY KIND WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, PERSONAL INJURY, PROPERTY DAMAGE, LOST PROFITS, OR OTHER ECONOMIC INJURY DUE TO ANY DEFECT IN THE GOODS OR ANY BREACH OF SCC, SCC SHALL NOT BE LIABLE TO THE PURCHASER IN TORT FOR ANY NEGLIGENT DESIGN OR MANUFACTURE OF THE GOODS, OR FOR THE OMISSION OF ANY WARNING THEREFROM.

SCC shall have no obligation or liability under this warranty for claims arising from any other party's (including Purchaser's) negligence or misuse of the Goods or environmental conditions. This warranty does not apply to any claim or damage arising for or caused by improper storage, handling, installation, maintenance, or from fire, flood, accidents, structural defects, building settlement or movement, acts of God, or other causes beyond SCC's control.

Except as expressly stated herein, SCC makes no warranty, express, implied, statutory or otherwise as to any parts or goods not manufactured by SCC. SCC shall warrant such parts or Goods only (I) against such defects, (II) for such periods of time, and (III) with such remedies, as are expressly warranted by the manufacturer of such parts or Goods. Notwithstanding the foregoing, any warranty with respect to such parts or Goods and any remedies available as a result of a breach thereof shall be subject to all of the procedures, limitations, and exclusions set forth herein.

THE WARRANTIES HEREIN ARE IN LIEU OF ALL WARRANTIES, EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE. IN PARTICULAR, SCC MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

No representative, agent or dealer of SCC has authority to modify, expand, or extend this Warranty, to waive any of the limitations or exclusions, or to make any different or additional warranties with respect to Goods.

Period of Limitations. No claim, suit or other proceeding may be brought by Purchaser for any breach of the foregoing warranty or this Agreement by SCC or in any way arising out of this Agreement or relating to the Goods after one year from the date of the breach. In the interpretation of this limitation on action for a breach by SCC, it is expressly agreed that there are no warranties of future performance of the goods that would extend that period of limitation herein contained for bringing an action.

Indemnifications. Purchaser agrees to indemnify, hold harmless, and defend SCC if so requested, from any and all liabilities, as defined herein, suffered, or incurred by SCC as a result of, or in connection with, any act, omission, or use of the Goods by Purchaser, its employees or customers, or any breach of this Agreement by Purchaser. Liabilities shall include all costs, claims, damages, judgments, and expenses (including reasonable attorney fees and costs).

Remedies of SCC. SCC's rights and remedies shall be cumulative and may be exercised from time to time. In a proceeding or action relating to the breach of this Agreement by Purchaser, Purchaser shall reimburse SCC for reasonable costs and attorney's fees incurred by SCC. No waiver by SCC of any breach of Purchaser shall be effective unless in writing nor operate as a waiver of any other breach of the same term thereafter. SCC shall not lose any right because it has not exercised it in the past.

Applicable Law. This Agreement is made in Michigan and shall be governed by and interpreted according to Michigan law. Any lawsuit arising out of this Agreement or the Goods may be handled by a federal or state court whose district includes Muskegon County, Michigan, and Purchaser consents that such court shall have personal jurisdiction over Purchaser.

Miscellaneous. If any provision of this Agreement is found to be invalid or unenforceable under any law, the provision shall be ineffective to that extent and for the duration of the illegality, but the remaining provisions shall be unaffected. Purchaser shall not assign any of its rights nor delegate any of its obligations under this Agreement without prior written consent of SCC. This Agreement shall be binding upon and inure to the benefit of SCC and Purchaser and each of their legal representatives, successors and assigns.

SCC warrants its products to be free of defects in materials and workmanship under normal use and service for a period of one (1) year from the date of delivery.

This warranty is extended only to the original purchaser for use of the Goods. It does not cover normal wear parts such as plastic tongs, tong holders, tong cables, bag holders, or acrylic dividers.

General Conditions. All service labor and/or parts charges are subject to approval by SCC. Contact the Customer Service Department in writing or call 231-798-8888.

All claims must contain the following information: (1) model & serial code number of equipment; (2) the date and place of installation; (3) the name and address of the agency which performed the installation; (4) the date of the equipment failure; and (5) a complete description of the equipment failure and all circumstances relating to that failure.

Once the claim has been determined to be a true warranty claim by SCC's Customer Service Department, the following procedure will be taken: (1) replacement parts will be sent at no charge from SCC on a freight prepaid basis; (2) reimbursement for service labor will be paid if the following conditions have been met— (a) prior approval of service agency was awarded from the Customer Service Department; and (b) an itemized statement of all labor charges incurred is received by the Customer Service Department. The cost of the service labor reimbursement will be based on straight time rates and reasonable time for the repair of the defect.

If problems occur with any compressor, notify SCC's Customer Service Department immediately. Any attempt to repair or alter the unit without prior consent from the Customer Service Department will render any warranty claim null and void. This warranty and protection plan does not apply to any condensing unit or any part thereof which has been subject to accident, negligence, misuse, or abuse, or which has not been operated in accordance with the manufacturer's recommendations or if the serial number of the unit has been altered, defaced, or removed.

Limit of Liability. The limit of liability of SCC toward the exchange cost of the original condensing unit, F.O.B. SCC, Norton Shores, MI, of each motor-compressor assembly replaced during the warranty shall not exceed manufacturer's current established wholesaler's exchange price and in no case shall the labor of removing or replacing the motor-compressor or parts thereof be the responsibility of SCC.